1. A method of transmitting data packets received from a non-constant delay medium, comprising:

storing the data packets in a buffer;

determining a play-out schedule for the data packets based on timing information in the data packets; and

transmitting the data packets from the buffer in accordance with the play-out schedule.

2. The method of claim 1, wherein two of the data packets contain time-stamps and the play-out schedule is determined based on a difference between the time-stamps.

3. The method of claim 2, wherein the play-out schedule controls play-out of the two data packets at times that correspond to the time-stamps.

4. The method of claim 2, wherein data packets that do not contain time-stamps are transmitted between the two data packets such that a delay exists between a second one of the two data packets and a last one of the data packets that do not contain time stamps.

5. The method of claim 4, wherein the data packets that do not contain time stamps are transmitted at a higher rate in order to reduce the delay.

6. The method of claim 1, further comprising:

identifying a data stream to which the data packets belong;

wherein the play-out schedule is also determined based on the identified data stream.

7. The method of claim 6, wherein the data stream is identified based on a packet identifier in the two data packets.

8. The method of claim 7, wherein the data stream comprises an MPEG (Motion Picture Experts Group) program stream that includes audio and video information.

9. The method of claim 1, wherein, if the play-out schedule indicates that first and second data packets are to be transmitted at the same time, the method comprises:

changing timing information in the second data packet

to indicate that the second data packet is to be transmitted after the first data packet.

10. The method of claim 9, wherein:

the first and second data packets belong to first and second data streams, respectively; and

the method further comprises changing timing information in other packets in the second data stream.

11. The method of claim 1, further comprising:

determining an occupancy level of the buffer; and

changing a frequency of a clock signal based on the occupancy level of the buffer.

12. The method of claim 11, wherein the frequency of the clock signal is changed so that the frequency corresponds to the frequency of a clock signal that was used by a device to produce the data packets.

13. An apparatus for transmitting data packets received from a non-constant delay medium, comprising:

a buffer which stores the data packets;

a scheduler which determines a play-out schedule for the data packets based on timing information in the data packets; and

an interface which transmits the data packets from the buffer in accordance with the play-out schedule.

14. The apparatus of claim 13, wherein two of the data packets contain time-stamps and the play-out schedule is determined based on a difference between the time-stamps.

15. The apparatus of claim 14, wherein the play-out schedule controls play-out of the two data packets at times that correspond to the time-stamps.

16. The apparatus of claim 14, wherein data packets that do not contain time-stamps are transmitted between the two data packets such that a delay exists between a second one of the two data packets and a last one of the data packets that do not contain time stamps.

17. The apparatus of claim 16, wherein the data packets that do not contain time stamps are transmitted at a higher rate in order to reduce the delay.

18. The apparatus of claim 13, further comprising:

a classification engine which identifies a data stream to which the data packets belong;

wherein the scheduler determines the play-out schedule also based on the identified data stream.

19. The apparatus of claim 18, wherein the data stream is identified based on a packet identifier in the two data packets.

20. The apparatus of claim 19, wherein the data stream comprises an MPEG (Motion Picture Experts Group) program stream that includes audio and video information.

21. The apparatus of claim 13, wherein, if the play-out schedule indicates that first and second data packets are to be transmitted at the same time, the scheduler changes timing information in the second data packet to

indicate that the second data packet is to be transmitted after the first data packet.

22. The apparatus of claim 21, wherein:

the first and second data packets belong to first and second data streams, respectively; and

the scheduler changes timing information in other packets in the second data stream.

23. The apparatus of claim 13, further comprising a processor that determines an occupancy level of the buffer and that changes a frequency of a clock signal based on the occupancy level of the buffer.

24. The apparatus of claim 23, wherein the frequency of the clock signal is changed so that the frequency corresponds to the frequency of a clock signal that was used by a device to produce the data packets.

25. An apparatus for transmitting data packets received from a non-constant delay network, comprising:

means for storing the data packets in a buffer;

means for determining a play-out schedule for the data packets based on timing information in the data packets; and

means for transmitting the data packets from the buffer in accordance with the play-out schedule.

26. A computer program stored on a computer-readable medium for transmitting data packets received from a non-constant delay medium, the computer program comprising instructions that cause a machine to:

store the data packets in a buffer;

determine a play-out schedule for the data packets based on timing information in the data packets; and

transmit the data packets from the buffer in accordance with the play-out schedule.